

REMARKS/ARGUMENTS

Claims 1-20 were pending at the time of the mailing of the final Office Action. Claims 17-20 were withdrawn from consideration. By this amendment, claims 1, 4 and 17 have been amended. No claims have been cancelled or added. Support for the amendments to claims 1 and 17 may be found at paragraphs 0019, 0032 and 0068 of the substitute specification (paragraphs 0024, 00037 and 0077 of U.S. Pat. Pub. No. US 2007/0181482, respectively).

In the Office Action of 3 August 2009, claims 4, 12 and 15 were rejected under the written description requirement of 35 U.S.C. § 112, first paragraph. The recitation of a micro-pore having a size greater than zero was alleged not to be found in the specification. Although a size greater than zero is certainly within the scope of the recitation of a size of zero to 100 nm, as recited in paragraph 0018, claim 4 has been amended to recite a micro-pore size less than 100 nm. The Applicants maintain that this recitation is fully supported by paragraph 0018 of the substitute specification (paragraph 0021 of U.S. Pat. Pub. No. US 2007/0181482). Additionally, it should be noted that there is no *in haec verba* requirement regarding compliance with the written description requirement. (MPEP §§ 2163 I.B., 2163.02). Withdrawal of the rejection under 35 U.S.C. § 112, first paragraph, is respectfully requested.

Claims 1-16 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failure to particularly point out and distinctly claim the subject matter of the invention. The recitation of “micro-pores” in claim 1 was indicated to have insufficient antecedent basis, when macro-pores had been previously recited. Claim 1 has been amended to correct this typographical error. Support for this amendment may be found in paragraph 0068 of the specification. Withdrawal of the rejection under 35 U.S.C. § 112, second paragraph, is respectfully requested.

Under 35 U.S.C. § 102(b), claims 1-3, 5-7 and 10-16 were rejected as being anticipated by Tennikova et al. (J. High Resol. Chromatogr., 2000, 23, 27-38) (hereinafter “Tennikova”). Additionally, claim 1 was rejected under 35 U.S.C. § 102(b) as anticipated by Hatch (US Pat. No. 6,238,565) (hereinafter “Hatch”).

Claim 1 has been amended to recite that the monolith structure is capable of adsorbing nucleic acids in the presence of potassium ions and is capable of releasing nucleic acids in an essentially salt free solution. Support for this amendment may be found in specification at paragraphs 0019 and 0032. The Applicants maintain that neither Tennikova nor Hatch teach or suggest such a monolith structure either individually or in combination. Tennikova’s monolith structure uses an elution buffer containing salt in each example (see Figs. 5-10 for example). Likewise, Hatch teaches the use of gradient elutions utilizing salts such as triethylammonium acetate and tetrapropylammonium bromide.

Additionally, claim 1 has been amended to recite that the macro-pore size is selected to correspond to the size of the nucleic acid to be purified. Previously, the Applicants arguments in this regard were rejected as not being commensurate with the claims. The Applicants now reiterate that none of the cited references teach or suggest selection of a specific macro-pore size according to the size of the nucleic acid molecule to be purified. For example, Tennikova only provides for variation in the thickness of the monolith to adjust the separation of oligonucleotides of 8 to 14 bases. No teaching or suggestion is made by Tennikova of purifying nucleic acids of greater length, nor does Tennikova teach or suggest varying the size of the macropores to purify nucleic acids of various lengths. Additionally, as also mentioned previously, Hatch also does not teach or suggest a variation in pore size according to the size of the nucleic acid to be purified. Hatch only provides for the separation of nucleic acids with one composition for nucleic acids of 17 base pairs to 3 kilobase pairs (Hatch, Column 8, lines 5-8 and 20-21.)

For at least these reasons, withdrawal of the rejections under 35 U.S.C. § 102(b) is respectfully requested.

Under 35 U.S.C. § 103(a), claims 1-4, 8 and 9 were rejected as being unpatentable over Hatch in view of Urthaler et al. (US Pat. Pub. No. 2004/0002081) (hereinafter “Urthaler”) and claims 1-16 were rejected as being unpatentable over Hatch in view of Tennikova and in further view of Urthaler.

To establish a prima facie case of obviousness, three requirements must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. There must also be a reasonable expectation of success and the prior art reference or references must teach or suggest all of the claim limitations. (MPEP § 2143.) As discussed above, neither Hatch nor Tennikova teaches or suggests selecting the size of the macro-pores in the monolith according to the size of the nucleic acid molecule to be purified. Likewise, Urthaler provides no such teaching or suggestion. Neither would one of ordinary skill in the art arrive at such an invention by combining the teachings of the cited references. Therefore, claims 1-4, 8, and 9 patentably distinguish over Hatch in view of Urthaler. Likewise, claims 1-16 also patentably distinguish over Hatch in view of Tennikova and in further view of Urthaler. Withdrawal of the rejections under 35 U.S.C. § 103(a) is respectfully requested.

Accordingly, the Applicants maintain that the claims patentably distinguish over the prior art and are in condition for allowance. Rejoinder of non-elected claims 17-20 and the issuance of a Notice of Allowance is earnestly solicited.

The outstanding Office Action was mailed on 3 August 2009. The Examiner set a shortened statutory period for reply of 3 months from the mailing date. Therefore, a petition for a three month extension of time is hereby made with this response, which

accompanies a Request for Continued Examination. No other fees are believed to be due. The Commissioner is authorized to charge any fee or to credit any overpayment associated with the filing of this paper to Deposit Account 15-0450.

Respectfully submitted,

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